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Among the important foreign contributions is a paper by WADSWORTH[7] on the knapweed gall. This gall is most common on *Centaurea nigra* L., a very troublesome pasture weed, but also occurs *C. scabiosa* L., *C. montana* L., *C. paniculata* L., *Carduus nutans* L., *C. crispus* L., *C. anthoides* L., *Cirsium lanceolatum* L., *Serratula tinctoria* L., etc. The gall is caused by a dipterous insect which was originally described in 1758. The adults emerge during a period of about two weeks in June and deposit eggs on the young flower heads early in July. The author gives synonomy, historical discussion, description, life history, and distribution of the insect. The effect of this falling is to reduce the seed production to about 50 per cent. Of the seeds that are produced only 60.5 per cent germinate.—MEL. T. COOK.

Australian vegetation.—In a country of vast extent and consequent widely differing conditions it is difficult to gain any accurate concept of the most striking characters of the vegetation or of the principal affinities of the flora. Such a characterization was prepared by MAIDEN[8] in connection with the recent visit of the British Association to Australia. In reviewing the main natural divisions of the country he calls attention to the "geocols," broad depressed areas running east and west and separating wide plateaus, and to their possible influence upon plant distribution. Interesting botanical statistics show among other things that one family, the Leguminosae, is represented by 1275 species, while the Myrtaceae, Proteaceae, and Compositae show over 500 species each. Among remarkable prominent genera are *Acacia* with 412 species, and *Eucalyptus* with 230 species. Incidentally it would seem that the largest specimens of the latter of which authentic measurements exist are about 326 ft. in height and 25 ft. 7 in. in circumference, 6 ft. from the ground, dimensions excelled by the sequoias of America.

Some attention is given to introduced plants, many of which are of vast importance in the weed problems of the agricultural areas. The most remarkable instance cited is that of the prickly pear, *Opuntia inermis*, introduced from Rio de Janeiro in 1789 as food for the cochineal insect, which is now badly infesting an area of 30,000,000 acres, to which about 1,000,000 acres are being added annually by its natural increase.

The flora is analyzed rather effectively and its various affinities demonstrated. Finally, concise sketches are given of the flora and vegetational types of the various individual states. It is impossible to summarize these already condensed characterizations, but it may be of interest to note the attention directed to Victoria, the most carefully studied areas of which are rich forests of the beech, *Fagus Cunninghamii*, and of the various species of *Eucalyptus*.

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[7] WADSWORTH, J. T., Some observations on the life history and bionomics of the knapweed gall fly *Urophora soltitiallii* Linn. Annals Appl. Biol. 1:142–169. 1914.

[8] MAIDEN, J. H., Australian vegetation. Federal handbook on Australia. pp. 163–209. 1914. Issued in connection with the visit of the British Association for the Advancement of Science to Australia. 1914.

With the above it is interesting to compare the impressions of a visitor, as given by SAUNDERS[9] reporting the tour of the British Association in Australia. More detailed studies of limited areas are those of OSBORN and HARDY,[10] the latter giving an interesting account of a scrub vegetation termed "mallee," as it occurs in a portion of Victoria with 12–20 in. annual precipitation. This seems to be a semi-desert association of woody plants growing 6–10 ft. high, at times forming a rather open stand, but often almost impenetrable thickets. Shrubby species of *Eucalyptus* with vegetative habits of reproduction predominate with the almost leafless "broom mallee," *Exocarpus spartium*, upon sandy ridges.

OSBORN[11] describes the climatic conditions of the region about Adelaide which possesses a winter rainfall, 70 per cent of the total annual precipitation being between the months of May and October. Evidences remain that the plains upon which the city of Adelaide now stands were originally well wooded with various species of *Eucalyptus*, while the low sandy flats separating the plains from the sea show associations of the mangrove, *Avicennia officinalis*, and of shrubby species of *Salicornia*. Portions of the coast have in addition low sand dunes with grasses and shrubs. Notes upon other associations of the plains and mountains are also given, while not the least interesting is the brief study of the remarkable similarity of leaf forms existing in widely separated families, notably the sickle-shaped leaves of certain species of *Eucalyptus* and *Acacia*.—GEO. D. FULLER.

Meiotic divisions.—Owing to views put forward by LAWSON[12] as the result of an investigation of *Smilacina*, Miss WOOLERY[13] has investigated similar stages in a species of the same genus, and her conclusions do not agree in the main with those of LAWSON.

In the resting nucleus, the chromatin granules are found to be held in the meshes of a so-called fine linin network. This network, though perhaps not so extensive as it appears, is not altogether a fanciful structure. At no time in the early prophases was the individuality of the chromosomes apparent,

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[9] SAUNDERS, E. R., The Australian meeting of the British Association. I. Botanical excursions. New Phytol. **14**:50–62. 1915.

[10] HARDY, A. D., The mallee: Ouyen to Pinnaroo. Victorian Nat. **30**:148–167. 1914.

[11] OSBORN, T. G. B., Notes on the flora around Adelaide, South Australia. New Phytol. **13**:109–121. 1914.

[12] LAWSON, A. ANSTRUTHER, The phase of the nucleus known as synapsis. Trans. Roy. Soc. Edinburgh **47**:591–604. 1911.

[13] WOOLERY, RUTH, Meiotic divisions in the microspore mother cells of *Smilacina racemosa* (L.) Desf. Ann. Botany **29**:471–482. 1915.